

Claims

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1. A micro-support cushion system comprising:
a generally planar base formed of a first polymeric material;
a plurality of spring structures arranged in a selected pattern overlying the base, so that each of the spring structures contacts the base;
each spring structure comprising a top compression layer having a contact surface area and a corresponding bottom compression layer having a contact surface area, both layers formed of compressible materials and, in each spring structure, the top and bottom compression layers substantially aligned with one another;
each spring structure bottom layer having a larger contact surface area than the corresponding top layer thereby providing a higher compression rate than the corresponding top layer; and
and the top and bottom compression layers aligned so that, in use, once the top layer is compressed, additional force applied to the top layer is substantially transferred through the top layer to the corresponding bottom layer.
2. A micro-support cushion system according to claim 1 including a plurality of connections interconnecting the spring structures' respective top layers so as to maintain the spring structures positioned overlying the base substantially in accordance with the selected pattern.
3. A micro-support cushion system according to claim 1 wherein the selected pattern locates the spring structures generally spaced apart from one another by about 0.25 inch.
4. A micro-support cushion system comprising:
a base sheet and a top sheet both formed of compressible materials;
a plurality of spring structures integrally formed in the base sheet; and
a plurality of compression structures integrally formed in the top sheet, at least one of the compression structures aligned over a corresponding one of the spring structures; and wherein the compression structures are layered to provide gradual changes in compression rate as increasing force is applied pressing the base and top sheets together.
5. A micro-support cushion system according to claim 4 wherein each compression structure comprises a plurality of concentric cylindrical layers.

6. A micro-support cushion system according to claim 4 wherein each compression structure comprises a plurality of frustum shaped layers.

7. A layered spring assembly for use in a cushion support system, the spring assembly comprising:

a layered spring structure and a corresponding compression structure, each structure formed of a compressible material, and the structures aligned with one another for transfer of applied force through one structure to the other.

8. A layered spring assembly according to claim 7 wherein the compression structure is substantially flat.

9. A layered spring assembly according to claim 7 wherein the compression structure is layered.

10. A layered spring assembly according to claim 7 wherein:

the spring structure includes an integrally-formed central plunger region; and the compression structure includes an integrally-formed recess, sized and located to receive the plunger region in nesting engagement when the two said structures are pressed together;

the said plunger region having a length greater than a corresponding height of the recess, so that, in use, the plunger region is compressed when fully engaged in the recess.